

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A memory module for insertion in any one of connectors formed on a motherboard, and for connection to a motherboard transmission line, the module comprising:

a memory chip;

a pin configured and positioned to engage with the connector;

a bus which connects said memory chip to said pin and which is located on said memory module;

a terminating resistor connected to one end of said bus and being part of said memory module, and

a stab resistor connected between said pin and the other end of said bus,

the motherboard transmission line having a branch point connected to the connector in which the memory module is inserted, no signal reflection occurring at the branch point and at an end portion of the memory module.

2. (Previously Presented) A memory module for insertion in any one of connectors formed on a motherboard, the module comprising:

a memory chip;

a pin configured and positioned to engage with the connector;

a bus which connects said memory chip to said pin;

a terminating resistor connected to one end of said bus, and

a stab resistor connected between said pin and the other end of said bus;

said connectors being connected to a memory controller in a stab connection style, said stab resistor and said terminating resistor having stab resistance R_s and terminating resistance R_{term} , respectively, wherein

said stab resistance R_s and said terminating resistance R_{term} are given by:

$Rs = (N-1) \times Z_{effdimm} / N$, and

$R_{term} = Z_{effdimm}$

where N represents the number of said connectors; and $Z_{effdimm}$ represents the effective impedance of a memory chip arrangement portion consisting of said bus and said memory chip.

3. (Original) A memory module as claimed in Claim 1 further comprising other memory chips, wherein said bus is connected to all of the memory chips in common.

4. (Original) A memory module as claimed in Claim 1 further comprising other memory chips, other pins corresponding to said other memory chips respectively, and other buses for connecting said memory chips to said other pins severally.

5. (Original) A memory module as claimed in Claim 1, wherein said bus comprises a bi-directional bus.

6. (Original) A memory module as claimed in Claim 1, wherein said bus comprises a unidirectional bus.

7. (Original) A memory module as claimed in Claim 1, wherein said terminating resistor is formed in said memory chip.

8. (Currently Amended) A memory system including a plurality of memory modules inserted in connectors formed on a motherboard, wherein each memory module comprises:

a memory chip;

a pin configured and positioned to engage with one of said connectors;

a bus which connects said memory chip to said pin and which is located on said memory module;

a terminating resistor connected to one end of said bus and being part of said memory module, and

a stab resistor connected between said pin and the other end of said bus,
a motherboard transmission line having branch points connected to the respective
connectors, no signal reflection occurring at any of the branch points and at any end portions of
the memory modules.

9. (Previously Presented) A memory system including a plurality of memory modules inserted in connectors formed on a motherboard, wherein each memory module comprises:

a memory chip;
a pin configured and positioned to engage with one of said connectors;
a bus which connects said memory chip to said pin;
a terminating resistor connected to one end of said bus, and
a stab resistor connected between said pin and the other end of said bus;
said connectors being connected to a memory controller in a stab connection style on a motherboard, said stab resistor and said terminating resistor having stab resistance R_s and terminating resistance R_{term} , respectively, wherein

said stab resistance R_s and said terminating resistance R_{term} are given by:

$$R_s = (N-1) \times Z_{effdimm} / N, \text{ and}$$

$$R_{term} = Z_{effdimm}$$

where N represents the number of said memory modules; and $Z_{effdimm}$ represents the effective impedance of a memory chip arrangement portion consisting of said bus and said memory chip, and wherein

said mother board has wiring impedance Z_{mb} represented by:

$$Z = (2N-1) \times Z_{effdimm}.$$

10. (Previously Presented) A memory system as claimed in Claim 8, wherein each of said memory modules further comprises other memory chips, and said bus is connected to all of the memory chips in common in each of said memory modules.

11. (Original) A memory system as claimed in Claim 8, each of said memory modules further comprising other memory chips, other pins corresponding to said other memory chips respectively, and other buses for connecting said memory chips to said other pins severally.

12. (Original) A memory system as claimed in Claim 8, wherein said bus comprises a bi-directional bus.

13. (Original) A memory system as claimed in Claim 8, wherein said bus comprises a unidirectional bus.

14. (Previously Presented) A memory system including a plurality of memory modules inserted in connectors formed on a motherboard, wherein each memory module comprises:

- a memory chip;
- a pin configured and positioned to engage with one of said connectors;
- a bus which connects said memory chip to said pin;
- a terminating resistor connected to one end of said bus, and
- a stab resistor connected between said pin and the other end of said bus,
- wherein said bus comprises a unidirectional bus; and
- wherein said connectors are connected to said memory controller in stab connection style, said stab resistor and said terminating resistor having stab resistance R_s and terminating resistance R_{term} , respectively, wherein

said stab resistance R_s and said terminating resistance R_{term} meet an equation of:

$$Z_{mb} = R_s + Z_{effdimm} / N$$

where Z_{mb} represents wiring impedance of said motherboard; $Z_{effdimm}$ represents the effective impedance of a memory chip arrangement portion consisting of said bus and said memory chip; and N , the number of said memory modules.

15. (Original) A memory module as claimed in Claim 1, wherein said terminating resistor is formed in said memory chip.